

CHIMERIC ANTIGEN RECEPTORS TO CD276 FOR TREATING CANCER

SUMMARY

This licensing opportunity from the National Cancer Institute concerns the development of CARs comprising an antigen-binding fragment derived from the MGA271 antibody. The resulting CARs can be used in adoptive cell therapy treatment for neuroblastoma and other tumors that express CD276.

REFERENCE NUMBER

E-243-2015

PRODUCT TYPE

- Therapeutics

KEYWORDS

- antigen-binding fragment, antibody, CAR, adoptive cell therapy, neuroblastoma

COLLABORATION OPPORTUNITY

This invention is available for licensing.

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DESCRIPTION OF TECHNOLOGY

Chimeric antigen receptors (CARs) are hybrid proteins consisting of an antibody binding fragment fused to protein signaling domains that cause T-cells which express the CAR to become cytotoxic. Once activated, these cytotoxic T-cells can selectively eliminate the cells which they recognize via the antibody binding fragment of the CAR. By engineering a T-cell to express a CAR that is specific for a certain cell surface protein, it is possible to selectively target those cells for destruction. This is a promising new therapeutic approach known as adoptive cell therapy.

CD276 (a.k.a., B7-H3) is a tumor-associated antigen that is expressed on the cell surface of several cancers, including neuroblastomas, prostate cancer, ovarian cancer and some lung cancers. This technology concerns the development of CARs comprising an antigen-binding fragment derived from the MGA271 antibody. The resulting CARs can be used in adoptive cell therapy treatment for neuroblastoma and other tumors which express CD276.

POTENTIAL COMMERCIAL APPLICATIONS

- Treatment of cancers associated with expression of CD276
- Specific cancers include neuroblastoma, prostate cancer, ovarian cancer, lung cancer and other solid tumors

COMPETITIVE ADVANTAGES

- MGA271 is a well characterized anti-CD276 antibody, making it a known quantity regarding safety issues
- High affinity of the MGA271 antibody for CD276 increases the likelihood of successful targeting
- Targeted therapy decreases non-specific killing of healthy, essential cells, resulting in fewer non-specific side-effects and healthier patients

INVENTOR(S)

[Crystal Mackall](#) (Stanford University)

DEVELOPMENT STAGE

- Discovery (Lead Identification)

PATENT STATUS

- **U.S. Provisional:** U.S. provisional patent application 62/216,447 (E-243-2015/0-US-01), filed 10 September 2015

THERAPEUTIC AREA

- Cancer/Neoplasm